

Docket No.: PF-0187-2 DIV

shown in Fig 6, NDS-2 has chemical and structural homology with the bovine B15 subunit (GI 114). In particular, NDS-2 and B15 share 74% identity. B15 is one of several nuclear encoded NADH-D subunits that lacks an N-terminal signal sequence, but is N-acetylated at an adjacent alanine or serine residue following removal of the initiator methionine. Both NDS-2 and B15 share the critical serine residue in position 2. As illustrated by Figs. 10A and 10B, NDS-2 and B15 have rather similar hydrophobicity plots. In particular NDS-2 and B15 share a peak of hydrophobicity between approximately residues 90 to 115 that is believed to be a membrane spanning alpha-helix. Northern analysis indicates that partial transcripts of the gene encoding NDS-1 are most abundant in cDNA libraries from cancerous tissues (26/81), particularly in prostate, brain, and bladder tumors, and in smooth muscle tissues (26/81). It is also notable in fetal and neonatal tissues, the brain and spinal cord, and in cells of the immune system.

In another embodiment, the invention encompasses a polypeptide comprising the amino acid sequence of SEQ ID NO:5, as shown in Fig. 3. NDS-3 is 106 amino acids in length. As shown in Fig 7, NDS-3 has chemical and structural homology with the bovine 15-kDa (IP) subunit (GI 224). In particular, NDS-3 and 15-kDa (IP) share 75% identity. The 15-kDa subunit is one of several subunits found in the iron-sulfur protein (IP) fraction during purification of NADH-D. The 15-kDa (IP) subunit contains four cysteine residues, all of which are shared by NDS-3, that may form one of the iron-sulfur centers that functions in electron transport. As illustrated by Figs. 11A and 11B, NDS-3 and 15-kDa (IP) have rather similar hydrophobicity plots. Northern analysis indicates that partial transcripts of the gene encoding NDS-3 are most abundant in cDNA libraries from cancerous tissues and immortalized cell lines (28/88), smooth muscle tissues (17/88), and in brain and neural tissues (10/88). They are also found in fetal, developing tissues and in tissues associated with inflammation and the immune response.

IN THE CLAIMS

Please amend claims 1, 2, 5, 6, 8 and 14 as follows. All of the pending claims are reiterated below for the Examiner's convenience. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."